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ABSTRACT

This preliminary report covers the first stage of research into teacher preferences for teaching situations. It assessed preferences of teacher trainees and determined any change in their attitude after an intensive teacher training program. Two sets of line drawings were used, the first showing ten arrangements of classroom furniture and the second showing five face-to-face teaching arrangements, both sets ranging from a tutorial to a lecture situation. The subjects were 152 Stanford teacher interns, 35 male and 117 female, all planning to teach in secondary schools and all without teaching experience. Pre- and posttest data were obtained, with a 6-week interval for teaching instruction. The drawings were used in a paired-comparison format and students also ranked them by order of preference. Results are set out in five tables and show a significant relationship between physical surroundings and interpersonal teaching preferences. The results also appear stable from pre- to posttest and whether viewed by the interns as prospective student or prospective teacher. Future research will be concerned with establishing personality correlates based on assessments of authoritarianism, and traditionalism as opposed to progressivism. (MBM)

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Research Memorandum No. 22

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by

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Preferences of Teacher Trainees for Teaching Situations
The Reaction to Teaching Situations Test

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The purpose of the present study was twofold: (1) to assess the preferences of teacher trainees for teaching situations and (2) to determine the extent of preference change of teacher trainees toward teaching situations after an intensive teacher training program. Accordingly, two sets of line drawings (Set A and Set B) were constructed to assess preference for teaching situations. Two contextual papameters of teaching were assessed: (a) the physical environment and (b) face-to-face interaction.

Set A consisted of 10 line drawings which reflected different arrangements of classroom furniture. Physical arrangement of furniture ranged from small intimate tutoral settings to cold impersonal lecture situations. Set B consisted of 5 line drawings which differed in their degree of teacher-student face-to-face interaction. The interaction ranged from a large class lecture to a one-to-one tutoral. Both sets of stimulus materials were presented in a ranking and a paired-comparison format.

Method

Subjects consisted of 152 Stanford teacher interns, with a median age of 22. There were 35 males and 117 females, all of whom planned a career in secondary school teaching. Most of the teachers had had little training, if any, in curriculum and instruction, and no previous teaching experience prior to the beginning of their training period.

Data were obtained in a pre and posttest design with the collection of data in the pretest phase separated by a six-week interval from data collection in the posttest phase. The instructional treatment consisted of a six week course of instruction in educational psychology, curriculum and instruction, and the technical skills of teaching.

Foreword

This research memorandum represents a preliminary report of a project that is seeking to extend psychological research on teacher preferences and attitudes toward teaching situations. The inquiry is guided by the assumption that teacher preferences for teaching situtations provide a basis for exploring linkages between personalogical and behavioral variables as they are related to teacher-student performance criteria.

Prior research in the study of teacher attitudes has been directed toward personality correlates of teacher behavior (Ryans, 1960; Leeds, 1950). The present study represents an attempt to assess teacher preferences for teaching situations and relate such preferences to: (a) certain classes of cognitive and affective variables; (b) the ability to demonstrate theoretically required technical skills of teaching associated with situational preference; (c) the dynamic relationship between teacher-student preferences for instructional situations; (d) personality correlates of preference for teaching situations which cause a teacher to perform better in one teaching situation than another.

This research memorandum represents a summary of the first stage of the inquiry--the development of an instrument to assess teacher preferences for teaching situations. This study was an outgrowth of research initiated by the pupillometry research project. The members of the pupillometry research staff were especially helpful in the data collection phase of the project. Acknowledgment of their devoted efforts and our thanks is extended to Donald Elman and to Mlles. James, Warren, Pierce, and Macchello. We also wish to acknowledge the contributions of Richard Snow, who assisted us in the early design phases of the research, the assistance of Richard Clark, who was able to find time in the teachers' busy schedules to have them participate in the study, and finally, we wish to thank the Stanford Secondary Teaching Interns for their availability and good-natured resistance.

The teacher trainees recorded on paper their preference for the various drawings from Set A and Set B in a paired-comparison format. Each stimulus within Set A and Set B was paired with each other, till all possible combinations of pairs were made. The trainees were also asked to rank the stimuli within each set in order of their preference. Thus the data consisted of both paired-comparison choices and rankings.

In the pretest stimuli were presented to groups of trainees, which ranged from 1 to 12, seated at a table facing a projection screen in a large, empty room. Instructions to trainees were both written and oral. The trainees were assured that their responses would remain confidential and that the procedure was in no way a test of intellectual ability. The trainees were told that they would see a series of 55 pairs of pictures, and that they should indicate on their answer sheets which picture of each pair they preferred. They were directed to view each stimulus pair and to make the decision as to which of the pictures they preferred by asking themselves: "which of these situations would I prefer to teach in," The pairs of stimuli were then projected at the rate of 1 slide each 10 seconds. The first 45 slides showed each picture of Set A paired with every other picture within that set. The next 10 slides showed every possible pair of pictures within Set B. The order of presentation of pairs of stimuli within each set was determined randomly.

After all 55 pairs of pictures had been shown, the trainees were told that each of the next two slides would have several pictures on them. The trainees were instructed to rank all of the pictures for each slide on a scale from "would most like to be a student in" to "would least like to be a student in." No time limitation was imposed on this part of the session. E waited until all the trainees had completed the ranking procedure before changing the slide. The first slide included all 10 pictures randomly arranged from Set A. The second slide showed the 5 randomly arranged pictures from Set B.

Paired-comparison and ranking procedure for the posttest administration was basically the same as that of the pretest except that the trainees completed the tasks all at one time--in a large lecture room instead of in small groups.

Results

Table 1 shows the pre and posttest paired comparison matrices and derived average ranks for Set A stimuli. The upper right half of the matrix shows the pretest average percent stimulus chosen score based on a total sample size of 152. The lower left half of the matrix shows the posttest average percent stimulus chosen score based on a total sample size of 126. The stimuli within Set A are lettered A through J. The stimuli range along a continuum where stimulus A represents a small intimate tutorial setting and stimulus J represents a cold impersonal lecture. The pretest and posttest derived average percent rank is shown below the matrix. The Spearman rank difference correlation coefficient between pre and posttest ranks was .95. The average Spearman rank difference correlation across all trainees (N=126) was .72.

Table 2 shows the pre and posttest paired comparison matrices and derived average ranks for Set B stimuli. The upper right half of the matrix shows the pretest average percent stimulus chosen score based on a total sample size of 152. The lower left half of the matrix shows the posttest average percent stimulus chosen score based on a total sample size of 126. The stimuli within Set B were lettered K through O. The stimuli range along a continuum where stimulus K represents a one-to-one tutoral situation and stimulus O a large class lecture. The pretest and posttest derived average percent rank is shown below the matrix. The Spearman rank difference correlation coefficient between pre and posttest ranks was .95. The average Spearman rank difference correlation across all trainees (N=126) was .76.

Table 3 shows the pre and posttest average rank and standard deviations assigned to the stimuli from Sets A and B derived from the ranking phase of the testing procedure. Spearman rank difference correlation coefficients between pre and posttest rankings were .95 and 1.00 for Sets A and B respectively. The average Spearman rank difference correlation across all trainees (N=126) was .75.

Table 4 shows the pre and posttest average ranked percent and the ranked average rank for stimuli within Sets A and B. The Spearman rank difference correlation coefficient was .95 or higher for within and between pre and posttest administrations.

Table 4 clearly shows the highly significant choice congruence between physical surroundings and interpersonal teaching preferences. These preferences appear to be highly stable from pre to posttest and occur regardless of instructional set. That is, whether teacher trainees indicate their preferences from the point of view of "prefer to teach in," or "prefer to be a student in," preferences are highly stable. Test-retest correlation coefficients were .95 or higher, significant at the .001 level of confidence ($p < .001$).

Examination of Table 4 shows that there was a trend for trainees to prefer less social distance for classroom physical arrangements in the posttest than in the pretest. Average percent difference scores show a decrease in preference for stimuli G, H, I, and J with the pre to posttest difference score for stimulus I, decreasing on the average of 13.2 percent. Stimuli A, B, C, D, E, and F all increase, with C, the highest, increasing an average of 12.0 percent. It is difficult to ascertain whether these trends are caused by the change in sample size from pre (N=156) to posttest (N=126), or the impact of the teacher training program. The same trend is also reflected in the average percent changes derived from Set B. None of the average percent change scores is significant.

Table 5 shows Spearman rank order correlation coefficient "consistency matrix" scores for pre and posttest administrations of Set A and Set B. A "consistency" score is defined as the Spearman rank order correlation between ranks derived from the paired comparison data and the ranking task. Set A, stimuli A - J, is shown as the columns of the matrix. Set B, stimuli K - O, is shown as the rows of the matrix. The Spearman rank order correlation coefficient distributions for Set A and Set B were divided into roughly thirds. Trainees were then sorted into cells of the matrix according to their consistency score. Table 5 shows that 112 and 107 trainees in the pre and posttest respectively had significantly high consistency scores. Thus 65 percent of the trainees in the pretest and 82 percent of the trainees in the posttest had, on the average, significantly high consistency scores. These data serve

to illustrate the highly stable choice patterns for teaching situations whether the trainee makes his choice from the frame of reference as a teacher or as a student.

In summary, it may be concluded that there are no significant differences between contextual dimensions of teaching preferences for trainees making choices as "students" or as "teachers". There were no significant changes in expressed preferences from pre to posttest. Pre to posttest Spearman rank order correlation coefficients were highly significant ($p < .001$). The stimuli from Set A and Set B were preferred both before and after the teacher training program, overwhelmingly, by a significant majority of teacher trainees in the following order: E, D, A, F, C, B, H, G, I, J, M, K, L, N, O.

The next phase of inquiry is directed toward establishing personality correlates of teacher preferences for teaching stiuations. Two noncognitive measures, the F-scale (Adorno, et al., 1950) and the Kerlinger Education Scale VII (Kerlinger, 1967) will serve as the independent variables. The F-scale provides an index of authoritarianism--the tendency to control others in ways that set tasks, prescribe procedures, and judge results without permitting others to share in the decision process. The Kerlinger Scale VII provides an index of traditionalism and progressivism--the traditionalist views discipline, subject matter, moral standards, and certain other referents as criterial while such referents as child needs, individual differences, and social learning are criterial to the progressive.

Hypotheses derived from personality theory concerning the effects that authoritarianism and progressivism-traditionalism may have on teacher preferences for teaching situations provide the guiding set of assumptions for the next phase of the study. It is expected that high authoritariansim and traditionalism test scores will be significantly related to preference for lecture type teaching situations. Conversely, low authoritarianism and high progressivism test scores will be significantly related to preferences for teacher-student face-to-face teaching situations.

A forthcoming research memorandum will present the particular hypotheses, procedures, and results of this next phase of the study.

TABLE 1

Pre and Posttest Paired Comparison Matrices and Derived Average Ranks for Test Stimuli for Set "A"

		SLIDE WHICH S CHOSE										
STIMULI		A	B	C	D	E	F	G	H	I	J	
Posttest (N=126)	A	----	25.7	42.8	56.6	75.7	59.9	34.9	46.7	32.9	20.4	Pretest (N=152)
	B	24.6	----	66.4	82.9	83.6	63.2	53.9	59.9	43.4	34.9	
	C	49.2	80.2	----	77.6	80.3	48.0	42.1	62.5	38.2	19.1	
	D	51.6	17.2	62.7	----	83.6	46.7	25.0	32.9	23.0	13.2	
	E	69.8	84.1	77.8	82.5	----	17.1	17.1	17.8	14.5	5.9	
	F	53.2	59.5	57.9	34.9	13.5	----	29.6	39.5	30.3	14.5	
	G	29.4	41.3	19.8	19.8	7.9	15.1	----	71.1	54.6	15.8	
	H	34.1	46.8	30.2	24.6	10.3	25.4	73.8	----	29.6	15.1	
	I	17.5	33.3	20.6	16.7	4.8	13.5	31.0	16.7	----	13.8	
	J	13.5	23.0	11.1	4.0	3.2	3.2	11.1	5.6	19.8	----	
Pretest Average Percent		56.1	37.5	49.0	65.9	83.4	57.9	40.1	53.9	39.2	17.0	
Posttest Average Percent		61.9	42.7	61.0	67.1	86.1	62.4	35.3	47.0	26.0	10.5	
Pre and Posttest Average Percent Difference Score		5.8	5.2	12.0	1.2	2.7	4.5	-4.8	-6.9	-13.2	-6.5	
Pretest Average Percent Rank[1,2]		4.0	9.6	6.0	2.0	1.0	3.0	7.0	5.0	8.0	10.0	
Posttest Average Percent Rank		4.0	7.0	5.0	2.0	1.0	3.0	8.0	6.0	9.0	10.0	

[1] Spearman Rank Difference correlation coefficient between pre and posttest average percent rank = .95

[2] The average pre-posttest Spearman Rank Difference correlation across all Ss (N=126) =.72

TABLE 2

Pre and Posttest Paired Comparison Matrices and Derived Average Ranks for Test Stimuli for Set "B"

STIMULI		K	L	M	N	O	
	K	----	38.8	50.0	30.9	16.4	
	L	32.5	----	61.8	44.7	17.1	
Posttest	M	42.1	61.1	----	31.6	9.2	Pretest
(N=126)	N	24.6	35.7	23.0	----	11.2	(N=152)
	O	5.6	7.9	6.3	6.3	----	
Pretest Average Percent		66.0	53.8	67.8	49.0	13.5	
Posttest Average Percent		73.8	56.9	68.5	44.2	6.5	
Pre and Posttest Average Percent Difference Score		7.8	3.1	.7	-5.2	-7.0	
Pretest Average Percent Rank[1,2]		2.0	3.0	1.0	4.0	5.0	
Posttest Average Percent Rank		1.0	3.0	2.0	4.0	5.0	

[1] Spearman Rank Difference correlation coefficient between pre and posttest average percent rank = .95.

[2] The verage pre-posttest Spearman Rank Difference correlation across all Ss (N=126) =.72.

TABLE 3

Pre and Posttest Average Rank and Standard Deviations for the Ranking Phase of the Test Administration for Stimulus Sets A and B.

		Stimulus														
		Set A										Set B				
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Pretest (N=152)	Mean	4.97	6.94	6.08	4.28	2.55	4.07	5.88	5.21	6.49	8.52	2.55	2.86	2.01	3.05	4.53
	S. D.	2.81	2.86.	2.36	2.18	1.96	2.17	2.31	2.42	2.70	2.05	1.27	1.21	.99	1.18	.98
Posttest (N-126)	Mean	4.37	6.03	4.72	3.94	2.33	4.51	6.37	6.01	7.66	9.06	2.13	2.52	2.62	3.31	4.79
	S. D.	2.92	2.75	2.11	2.23	1.60	2.09	2.11	2.07	2.32	1.50	1.22	1.08	1.03	1.02	.69
Pretest Ranked Average Rank[1,2]		3.0	6.5	5.0	2.0	1.0	4.0	8.0	6.5	9.0	10.0	2.0	3.0	1.0	4.0	5.0
Posttest Ranked Average Rank		4.0	7.0	5.0	2.0	1.0	3.0	8.0	6.0	9.0	10.0	1.0	3.0	2.0	4.0	5.0

[1]Spearman Rank Difference correlation coefficients between pre and posttest rankings were .95 and 1.00 for Sets A and B respectively.

[2]The average pre-posttest Spearman Rank Difference correlation across all Ss (N=126) = .75.

TABLE 4

Pre and Posttest Average Rank Assigned to Test Stimuli from Sets A and B:

Paired Comparison and Ranking Procedures

	STIMULI														
	SET A										SET B				
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Pretest (N=152)															
Ranked Average Rank[1]	3.0	6.5	5.0	2.0	1.0	4.0	8.0	6.5	9.0	10.0	2.0	3.0	1.0	4.0	5.0
Ranked Percent	4.0	9.0	7.0	3.0	1.0	2.0	6.0	5.0	8.0	10.0	1.0	3.0	2.0	4.0	5.0
Posttest (N=126)															
Ranked Average Rank	4.0	7.0	5.0	2.0	1.0	3.0	8.0	6.0	9.0	10.0	1.0	3.0	2.0	4.0	5.0
Ranked Percent	4.0	9.0	6.0	2.0	1.0	3.0	7.0	5.0	8.0	10.0	2.0	3.0	1.0	4.0	5.0

[1]The Spearman Rank Difference correlation coefficient is .95 or higher for within and between pre- and posttest administrations.

TABLE 5

Pre and Posttest Within Subject Rank Order Correlation Consistency Matrix
For Sets A and B

PRETEST

SET B

SET A	-.10 to .27	.28 to .63	.64 to 1.00	
-.71 to -.14	N=2	N=1	N=2	5
-.15 to .43	N=1	N=2	N=9	12
.44 to 1.00	N=2	N=21	N=112	135
TOTALS	5	24	123	152

POSTTEST

SET B

SET A	0 to .33	.34 to .67	.68 to 1.00	
-.13 to .24	N=2	N=0	N=1	3
.25 to .62	N=1	N=0	N=8	9
.63 to 1.00	N=2	N=5	N=107	114
TOTALS	5	5	116	126

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